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(12) **United States Patent**
Yeh(10) **Patent No.:** **US 6,614,364 B1**
(45) **Date of Patent:** **Sep. 2, 2003**(54) **RUBBER MEMBRANE USED IN A
COMPUTER KEYBOARD**(75) Inventor: **Chi-Pin Yeh, Pai-Ho (TW)**(73) Assignee: **Darfon Electronics Corp., Tao-Yuan
Hsien (TW)**(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 0 days.(21) Appl. No.: **09/576,137**(22) Filed: **May 22, 2000**(30) **Foreign Application Priority Data**

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(51) **Int. Cl.⁷** **H03M 11/00**(52) **U.S. Cl.** **341/34; 341/22; 200/5 R**(58) **Field of Search** 341/22; 200/345,
200/5 R, 6 R, 440, 344, 9, 512, 513; 361/725,
748, 749, 807; 400/490, 491(56) **References Cited****U.S. PATENT DOCUMENTS**5,494,363 A * 2/1996 Hochgesang 400/495
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A computer keyboard includes a base stand, a membrane circuit board installed on the base stand and a plurality of key mechanisms. The membrane circuit board has a plurality of pressure sensors for generating key-pressing signals and each of the key mechanisms is positioned above one of the pressure sensors. The rubber membrane includes a connecting membrane and a plurality of upwardly protruding rubber domes that can be easily detached from the connecting membrane. Each of the rubber domes is positioned above one of the pressure sensors of the membrane circuit board to support the key mechanism above it. When installing the rubber membrane, the rubber domes of the rubber membrane are placed above and glued to the pressure sensors of the membrane circuit board. Then the connecting membrane of the rubber membrane is torn away, leaving the rubber domes on the membrane circuit board.

13 Claims, 8 Drawing Sheets